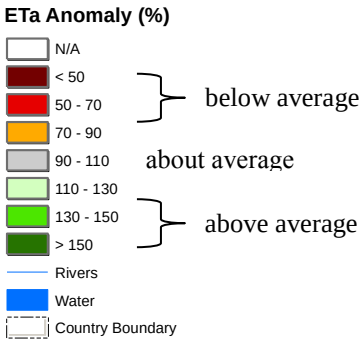
SSEB Evapotranspiration Anomaly Products
(Version 1.0, April 2011)

Evapotranspiration (ET) is the combination of transpiration from vegetation and evaporation from soil. Actual ET (ETa) is produced using the Simplified Surface Energy Balance (SSEB) model (Senay et al., 2007, 2010) for the period 2000 to present. The SSEB approach, adapted from SEBAL/METRIC (Allen et al., 2007), combines ET fractions generated from remotely sensed MODIS thermal imagery, acquired every 8 days, with reference ET using a thermal index approach.

ETa anomaly products (current vs. 2001 – 09) are available at the following: http://earlywarning.usgs.gov/usewem/eta_energy.php. The anomalies are the ratio of ETa and the corresponding median ETa, expressed as a percent value.



Listed below are all ETa anomaly products offered:

Monthly ETa products:
ETa anomaly products for every month in a year.

Cumulative ETa anomaly products:
ETa anomaly products are cumulative in intervals of 8-day periods and grouped by major growing season:

- **April – October**

For display purposes the season graphics begin on April 01 (091), but the data include the entire 8-day periods (089 – 096).

References:

Allen, R.G., Tasumi, M., Trezza, R., 2007. Satellite-based energy balance for mapping evapotranspiration with internalized calibration (METRIC) – Model. ASCE J. Irrigation and Drainage Engineering 133, 380-394.

Bastiaanssen, W.G.M., M. Menenti, R.A. Feddes, and A. A. M. Holtslag, 1998. The surface energy balance algorithm for land (SEBAL): Part 1 formulation. Journal of Hydrology 212–213: 198–212.

Senay, G.B., M. Budde, J.P. Verdin, and A.M. Melesse, 2007. A coupled remote sensing and simplified surface energy balance approach to estimate actual evapotranspiration from irrigated fields. Special issue: Remote sensing of natural resources and the environment. SENSORS, 1, 979-1000.

Senay, G.B., M. Budde, J.P. Verdin, 2011. Enhancing the Simplified Surface Energy Balance (SSEB) approach for estimating landscape ET: Validation with the METRIC model. Agricultural Water Management, 98: 606-618.

Senay, G.B., S. Bohms, R. Singh, P.A. Gowda, N.M. Velpuri, H. Alemu and J.P. Verdin, 2012. Operational evapotranspiration mapping using remote sensing and weather datasets: A new parameterization for the SSEB approach. Journal of American Water Resources Research. In Review.